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sheep and the goat; the catamountain for the hare or the rabbit; and the wild cat for the squirrel or the mouse. In proportion as each carnivorous animal wants strength, it uses all the assistance of patience, assiduity, and cunning. However, the arts of these to pursue, are not so great as the tricks of their prey to escape; so that the power of destruction in one class is inferior to the power of safety in the other. Were this otherwise, the forest would soon be dispeopled of the feebler races of animals; and beasts of prey themselves would want, at one time, that subsistence which they lavishly destroyed at another.

Few wild animals seek their prey in the day-time; they are then generally deterred by their fears of man in the inhabited countries, and by the excessive heat of the sun in those extensive forests that lie towards the south, and in which they reign the undisputed tyrants. As soon as the morning, therefore, appears, the carnivorous animals retire to their dens; and the elephant, the horse, the deer, and all the hare kinds, those inoffensive tenants of the plain, make their appearance. But again, at nightfall, the state of hostility begins: the whole forest then echoes to a variety of different howlings. Nothing, sure, can be more terrible than an African landscape at the close of evening: the deep-toned roarings of the lion; the shriller yellings of the tiger; the jackal pursuing by the scent, and barking like a dog; the hyena, with a note peculiarly solitary and dreadful; but, to crown all, the hissing of the various kinds of serpents that at that time begin their call, and, as I am assured, make a much louder symphony than the birds in our groves in a morning.

Beasts of prey seldom devour each other; nor can any thing but the greatest degree of hunger induce them to it. What they chiefly seek after, is the deer or the goat; those harmless creatures, that seem made to embellish nature. These are either pursued or surprised, and afford the most agreeable repast to their destroyers. The most usual method with even the fiercest animals is to hide and crouch near some path frequented by their prey, or some water where cattle come to drink, and seize them at once with a bound. The lion and the tiger leap twenty feet at a spring; and this, rather than their swiftness or strength, is what they have most to depend upon for a supply. There is scarcely one of the deer or hare kind that is not very easily capable of escaping them by its swiftness; so that whenever any of these fall a prey, it must be owing to their own inattention.

But there is another class of the carnivorous kind that hunt by the scent, and which it is much more difficult to escape. It is remarkable, that all animals of this kind pursue in a pack, and encourage each other by their mutual cries. The jackal, the syagush, the wolf, and the dog, are of this kind: they pursue with patience rather than swiftness; their prey flies at first, and leaves them for miles behind; but they keep on with a constant steady pace, and excite each other by a general spirit of industry and emulation, till at last they share the common plunder. But it too often happens that the larger beasts of prey, when they hear a cry of this kind begun, pursue the pack, and, when they have hunted down the animal, come in and monopolize the spoil.

Nevertheless, with all the powers which carnivorous animals are possessed of, they generally lead a life of famine and fatigue. Their prey has such a variety of methods of escaping, that they sometimes continue without food for a fortnight together: but nature has endowed them with a degree of patience equal to the severity of their state; so that, as their subsistence is precarious, their appetites are complying. They usually seize their prey with a roar, either of seeming delight, or perhaps to terrify it from resistance. They frequently devour it, bones and all, in the most ravenous manner; and then retire to their dens, continuing inactive till the calls of hunger again excite their courage and industry. But as all their methods of pursuit are counteracted by the arts of evasion, they often continue to range without success, supporting a state of famine for several days, nay, sometimes weeks together. Of their prey, some find protection in holes, in which nature has directed them to bury themselves; some find safety by swiftness; and such as are possessed of neither of these advantages, generally herd together,

and endeavour to repel invasion by united force. The very sheep, which to us seem so defenceless, are by no means so in a state of nature; they are furnished with arms of defence, and a very great degree of swiftness; but they are still further assisted by their spirit of mutual defence—the females fall into the centre, and the males, forming a ring round them, oppose their horns to the assailants. Some animals, that feed upon fruits which are to be found only at one time of the year, fill their holes with several sorts of plants, which enable them to lie concealed during the hard frosts of the winter, contented with their prison, since it affords them plenty and protection. These holes are dug with so much art, that there seems the design of an architect in the formation. There are usually two apertures, by one of which the little inhabitant can always escape when the enemy is in possession of the other. Many creatures are equally careful of avoiding their enemies, by placing a sentinel to warn them of the approach of danger. These generally perform this duty by turns; and they know how to punish such as have neglected their post, or have been unmindful of the common safety. Such are a part of the efforts that the weaker races of quadrupeds exert to avoid their invaders, and in general they are attended with success. The arts of instinct are most commonly found an overmatch for the invasions of instinct. Man is the only creature against whom all their little tricks can scarcely prevail. Wherever he has spread his dominion, scarcely any flight can save, or any retreat harbour; wherever he comes, terror seems to follow, and all society ceases among the inferior tenants of the plain; their union against him can yield them no protection, and their cunning is but weakness. In their fellow brutes they have an enemy whom they can oppose with an equality of advantage; they can oppose fraud or swiftness to force, or numbers to invasion: but what can be done against such an enemy as man, who finds them out though unseen, and though remote destroys them? Wherever he comes, all the contest among the meaner ranks seems to be at an end, or is carried on only by surprise. Such as he has thought proper to protect, have calmly submitted to his protection; such as he has found it convenient to destroy, carry on an unequal war, and their numbers are every day decreasing.

The wild animal is subject to few alterations; and, in a state of savage nature, continues for ages the same in size, shape, and colour. But it is otherwise when subdued, and taken under the protection of man; its external form, and even its internal structure, are altered by human assiduity: and this is one of the first and greatest causes of the variety that we see among the several quadrupeds of the same species. Man appears to have changed the very nature of domestic animals by cultivation and care. A domestic animal is a slave that seems to have few other desires but such as man is willing to allow it. Humble, patient, resigned, and attentive, it fills up the duties of its station; ready for labour, and content with subsistence.

THE JACKAL.*

Although the species of the wolf approaches very near to that of the dog, yet the jackal seems to be placed between them; to the savage fierceness of the wolf it adds the impudent familiarity of the dog. Its cry is a howl, mixed with barking, and a lamentation resembling that of human distress. It is more noisy in its pursuits even than the dog, and more voracious than the wolf. The jackal never goes alone, but always in a pack of forty or fifty together. These unite regularly every day to form a combination against the rest of the forest. Nothing then can escape them: they are content to take up with the smallest animals; and yet, when thus united, they have courage to face the largest. They seem very little afraid of mankind; but pursue their game to their doors, without testifying either attachment or apprehension. They enter insolently into the sheepfolds, the yards, and the stables, and, when they can find nothing else, devour the leather harness, boots, and shoes, and run off with what they have not time to swallow.

* See engraving in our first page.

They not only attack the living, but the dead. They scratch up with their feet the new-made graves, and devour the corpse how putrid soever. In those countries, therefore, where they abound, they are obliged to beat the earth over the grave, and to mix it with thorns, to prevent the jackals from scraping it away. They always assist each other as well in this employment of exhumation as in that of the chase. While they are at this dreary work, they exhort each other by a most mournful cry, resembling that of children under chastisement; and when they have thus dug up the body, they share it amicably between them. These, like all other savage animals, when they have once tasted of human flesh, can never after refrain from pursuing mankind. They watch the burying-grounds, follow armies, and keep in the rear of caravans. They may be considered as the vulture of the quadruped kind; every thing that once had animal life seems equally agreeable to them; the most putrid substances are greedily devoured; dried leather, and any thing that has been rubbed with grease, how insipid soever in itself, is sufficient to make the whole go down.

They hide themselves in holes by day, and seldom appear abroad till nightfall, when the jackal that has first hit upon the scent of some larger beast gives notice to the rest by a howl, which it repeats as it runs; while all the rest that are within hearing, pack in to its assistance. The gazelle, or whatever other beast it may be, finding itself pursued, makes off towards the houses and the towns, hoping by this means to deter its pursuers from following; but hunger gives the jackal the same degree of boldness that fear gives the gazelle, and it pursues even to the verge of the city, and often along the streets. The gazelle, however, by this means most frequently escapes; for the inhabitants, sallying out, often disturb the jackal in the chase; and as it hunts by the scent, when once driven off, it never recovers it again. In this manner we see how experience prompts the gazelle, which is naturally a very timid animal, and particularly fearful of man himself, to take refuge near him, considering him as the least dangerous enemy, and often escaping by his assistance.

But man is not the only intruder upon the jackal's industry and pursuits. The lion, the tiger, and the panther, whose appetites are superior to their swiftness, attend to its call, and follow in silence at some distance behind. The jackal pursues the whole night with unceasing assiduity, keeping up the cry, and with great perseverance at last tires down its prey; but, just at the moment it supposes itself going to share the fruits of its labour, the lion or the leopard comes in, satiates himself upon the spoil, and his poor provider must be content with the bare carcass he leaves behind. It is not to be wondered at, therefore, if the jackal be voracious, since it so seldom has a sufficiency; nor that it feeds on putrid substances, since it is not permitted to feast on what it has newly killed. Beside these enemies, the jackal has still another to cope with, for between him and the dog there is an irreconcilable antipathy, and they never part without an engagement. The Indian peasants often chase them as we do foxes, and have learned by experience when they have got a lion or a tiger in their rear. Upon such occasions they keep their dogs close, as they would be no match for such formidable animals, and endeavour to put them to flight with their cries. When the lion is dismissed, they more easily cope with the jackal, who is as stupid as it is impudent, and seems much better fitted for pursuing than retreating. It sometimes happens that one of them steals silently into an outhouse to seize the poultry or devour the furniture, but hearing others in full cry at a distance, without thought it instantly answers the call, and thus betrays its own depredations. The peasants sally out upon it, and the foolish animal finds too late that its instinct was too powerful for its safety.

NATURALIST'S LIBRARY.

Another interesting volume, very much to our taste—mingling the *utile et dulce* in a way well calculated to effect

* The Naturalist's Library.—Mammalia, Vol. IV. Ruminantia, Part II. By Sir William Jardine, Bart. Edinburgh; W. H. Lizars.

the objects for which such publications are designed. To the scientific descriptions of the various animals are subjoined many amusing anecdotes and traits of character; and the work is prefaced by an interesting memoir of the justly celebrated John Hunter, whose elegantly arranged and scientifically classified museum of natural history was purchased at his death by Government, and is now so well known as the "Hunterian Museum of London." The description of its arrangement and classification by Sir E. Home will be perused with much interest by the scientific student and scholar.

In the details given of the various bovine tribes, there is a most interesting account of "the white urus"—a breed of wild cattle, which have been preserved in Scotland, in all their native and original characteristics, since the time at which the Romans first visited Britain.

"This very ancient and peculiar breed of cattle," says Mr. Brown, Chamberlain to the Duke of Hamilton, "has been long kept up with great care by the noble family of Hamilton, in a chase in the vicinity of their splendid seat at Hamilton, in the Middle Ward of the county of Lanark. They are generally believed to be the remains of the ancient breed of white cattle which were found on the island when the Romans first visited it, and which they represent as then running wild in the woods. The chase in which they browse was formerly a park or forest attached to the royal castle of Cadzow, where the ancient British kings of Strathclyde, and subsequently kings of Scotland, used frequently to reside and hold their courts.... In their general habits they resemble the fallow-deer more than any other domestic animal. Having been exposed, without shade or covering of any sort, to the rigours of our climate from time immemorial, they are exceedingly hardy; and having never been caught or subjected to the sway of man, they are necessarily peculiarly wild and intractable. Their affection for their young, like that of many other animals in a wild or half-wild state, is excessive. When dropt, they carefully conceal them among long grass or weeds in some brushwood or thicket, and approach them cautiously twice or thrice a day, for the purpose of supplying them with the necessary nourishment. On these occasions it is not a little dangerous to approach the place of retreat, the parent cow being seldom at any great distance, and always attacking any person or animal approaching it, with the utmost resolution and fury. The young calves, when unexpectedly approached, betray great trepidation, by throwing their ears back close upon their necks, and lying squat down upon the ground. When hard pressed, they have been known to run at their keepers in a butting menacing attitude, in order to force their retreat. The young are produced at all seasons of the year, but chiefly in spring. The mode of catching the calves is to steal upon them whilst slumbering or sleeping in their retreat when they are a day or two old, and put a cloth over their mouths, to prevent them crying, and then carry them off to a place of safety without the reach of the herd, otherwise the cry of the calf would attract the dam, and she, by loud bellowing, would bring the whole flock to the spot to attack the keeper in the most furious manner. These cattle are seldom seen scattering themselves indiscriminately over the pasture, like other breeds of cattle, but are generally observed to feed in a flock. They are very chary of being approached by strangers, and seem to have the power of smelling them at a great distance. When any one approaches them unexpectedly, they generally scamper off to a little distance to the leeward, and then turn round in a body to smell him. In these gambols they invariably affect circles; and when they do make an attack—which is seldom the case—should they miss the object of their aim, they never return upon it, but run straight forward, without ever venturing to look back. The only method of slaughtering these animals is by shooting at them. When the keepers approach them for this purpose, they seem perfectly aware of their danger, and always gallop off with great speed in a dense mass, preserving a profound silence, and generally keeping by the sides of the fields and fences. The cows which have young, in the mean time forsake the flock, and repair to the places where their calves are concealed, where, with flaming eyeballs and palpitating hearts, they